

Appl. No. 10/723,146
Amdt. dated January 16, 2009
Reply to Office Action of July 16, 2008

REMARKS

Pursuant to 37 C.F.R. § 1.114, reconsideration of the present application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 2 – 3, 8 – 10, 16 – 27, and 36 are presented for consideration. Claims 1, 6, 7, 11 – 15, and 28 – 35 are hereby cancelled without prejudice to the subject matter thereof. Claims 4 and 5 were cancelled in a previous amendment. Applicants reserve the right to pursue such canceled claims in a continuing application. New independent claim 36, set forth below, has been added, and claims have been amended to correct dependencies. As the number of independent claims and number of total claims do not exceed the numbers already paid for, no additional claim fees are due.

New independent claim 36 sets forth a method of treating a substrate to improve the alcohol repellency of the substrate, the method comprising passing a substrate through a treatment solution comprising an ionic fluoropolymer and a monovalent salt wherein the treatment solution contains less than about 0.05 weight percent of an antistatic agent, and wherein the treatment solution contains less than about 0.05 weight percent of the monovalent salt, and wherein the treated substrate has a percent loss in hydrostatic head value as compared to untreated fabric of about 10% or less.

Support for new independent claim 36 is found at least in original claim 1 and page 19, lines 11 – 13 of the specification (a method of treating a substrate to improve the alcohol repellency of the substrate, the method comprising passing a substrate through a treatment solution comprising an ionic fluoropolymer and a monovalent salt wherein the treatment solution contains less than about 0.05 weight percent of an antistatic agent), at page 17, lines 9 – 14 of the specification (wherein the treatment solution contains less than about 0.05 weight percent of the monovalent salt), and page 5, lines 8 – 11 (wherein the treated substrate has a percent loss in hydrostatic head value as compared to untreated fabric of about 10% or less).

No new matter has been added.

By way of the Office Action mailed July 16, 2008, claims 1 – 3, 6 – 8, and 11 – 17 were rejected under 35 U.S.C. § 103 as allegedly being obvious to one of ordinary skill in the art at the time the invention was made and thus unpatentable over US Patent Number 4,411,928 to Baldwin in view of US Patent Number 4,028,887 to Coates, both in view of either Gilbert (US 4,000,233) or Weipert (US 4,169,062). Additionally, claims 9, 10, 33, and 34 were rejected under 35 U.S.C. § 103 as allegedly being obvious to one of ordinary skill in the art at the time the invention was made and

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thus unpatentable over the above noted references as applied above, and further in view of Potts (US 5,145,727). These rejections are respectfully traversed to the extent that they may apply to the presently presented claims.

Applicants have discovered that a barrier property (hydrostatic head) of a substrate is negatively impacted by simultaneously treating the substrate with an ionic fluoropolymer treatment chemical (to promote alcohol repellency) and an antistat (to reduce buildup of static charge). This is demonstrated by Comparative Example B, which, when treated with ionic fluoropolymer and an anionic antistatic agent, demonstrated a 45% drop in the hydrostatic head value compared with an untreated sample (Comparative Example A). Applicants have additionally discovered that simple removal of the antistat from the treatment solution results in reduced adherence of the ionic fluoropolymer to the substrate, thus causing reduced alcohol repellency. This problem is particularly significant when passing the substrate through a treatment solution, as it is important that the fluoropolymer adhere to the substrate before it is removed from the treatment solution. Applicants have surprisingly discovered that using less than about 0.05 weight percent of a monovalent salt in the treatment solution will allow the ionic fluoropolymer to adhere to the substrate, thus providing significant alcohol repellency while resulting in a percent loss in hydrostatic head value of about 10% or less. This is demonstrated by Example 7, which, when treated with ionic fluoropolymer and 0.04% monovalent salt, demonstrated only a 7% drop in the hydrostatic head value compared with the untreated sample.

Baldwin teaches an alcohol repellent finish by treatment with a solution including fluoropolymer and a monovalent salt. According to the teaching of Baldwin, the monovalent salt is added to enhance the antistatic properties (col 5, lines 14 – 16), and is applied in an amount of 0.2 – 0.5 weight percent. Thus Baldwin's minimum amount of monovalent salt is 4 – 10 times more than the amount in Applicants' claim 36. Also, one of ordinary skill would not be motivated to adjust Baldwin's amount of monovalent salt downward, unless improperly motivated by Applicants' specification, because to do so would not enhance the antistatic properties, which is precisely the reason that Baldwin has the monovalent salt in the treatment solution. There is no recognition in Baldwin or the other cited references of the problem of negatively impacting barrier properties when simultaneously treating with ionic fluoropolymers and antistats. Baldwin's process is directed to promoting antistatic properties, while Applicants' process is directed to solving the problem by avoiding antistats. With these diametrically opposed purposes, it is difficult to see how one skilled in the art would be motivated to modify Baldwin to arrive at Applicants' solution to this problem as set forth in claim 36.

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Coates was cited for teaching that an anionic fluoropolymer may be utilized to impart alcohol repellency and does not address or correct the deficiencies of Baldwin noted above. Additionally, neither Gilbert nor Weipert nor Potts address or correct the deficiencies of Baldwin noted above.

For the reasons stated above, it is respectfully submitted that all of the presently presented claims are in form for allowance.

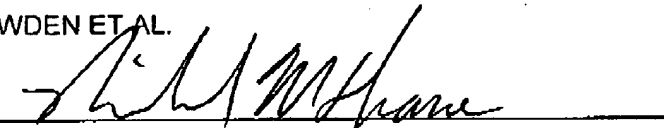
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The undersigned may be reached at telephone number 770-587-8626 or fax number 770-587-7327.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION

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